27. The apparatus as recited in claim 26, wherein for each table entry to be accessed, the circuitry is further configured to:
determine an oldest input word of the first group; and
send a read request for an input word in the table from only a hardware lane of the plurality of hardware lanes assigned to the oldest input word.

28. A method comprising:
storing input words in a table comprising a plurality of entries; and
in response to receiving an indication of a compression instruction:
assigning a first group of two or more input words to the plurality of hardware lanes;
responsive to determining at least a first input word and a second input word of the first group of two or more input words correspond to a same entry of the table, generating for the first input word and the second input word:
a single read request for the table; and
a single write request for the table; and
generating a compression packet for each of the first input word and the second input word.

29. The method as recited in claim 28, further comprising generating an index for each word assigned to a lane of the plurality of lanes.

30. The method as recited in claim 29, wherein to determine the first input word and the second input word of the first group of the two or more input words correspond to the same entry of the table, the method comprises determining the first input word and the second input word have a same index.

31. The method as recited in claim 28, further comprising generating an index corresponding to a given input word based at least in part on a hash of the given input word.

32. The method as recited in claim 28, further comprising determining whether to update the table with any of the input words of the first group prior to determining dependencies between input words of the first group.

33. The method as recited in claim 32, further comprising:
assigning a second group of input words from the plurality of input words to the first plurality of hardware lanes, wherein the second group is different from the first group wherein for each table entry to be accessed, the circuitry is further configured to:
determining a youngest input word of the first group; and
forwarding the youngest word to the second group prior to determining dependencies between input words of the first group.

34. The method as recited in claim 33, wherein for each table entry to be accessed, the further comprising:
determining an oldest input word of the first group; and
sending a read request for an input word in the table from only a hardware lane of the plurality of hardware lanes assigned to the oldest input word.

35. A system comprising:
a memory;
a cache coupled to the memory; and
a processor coupled to the memory and the cache, wherein the processor is configured to:
assign a first group of two or more input words to the plurality of hardware lanes;
responsive to determining at least a first input word and a second input word of the first group of two or more input words correspond to a same entry of the table, generate for the first input word and the second input word:
a single read request for the table; and
a single write request for the table; and
generate a compression packet for each of the first input word and the second input word.

36. The apparatus as recited in claim 35, wherein the processor is further configured generate an index for each word assigned to a lane of the plurality of lanes.

37. The apparatus as recited in claim 36, wherein to determine the first input word and the second input word of the first group of the two or more input words correspond to the same entry of the table, the processor is configured determine the first input word and the second input word have a same index.

38. The apparatus as recited in claim 35, wherein the processor is configured to generate an index corresponding to a given input word based at least in part on a hash of the given input word.

39. The apparatus as recited in claim 35, wherein the processor is configured to determine whether to update the table with any of the input words of the first group prior to determining dependencies between input words of the first group.

40. The apparatus as recited in claim 39, wherein the processor is configured to:
assign a second group of input words from the plurality of input words to the first plurality of hardware lanes, wherein the second group is different from the first group wherein for each table entry to be accessed, the circuitry is further configured to:
determine a youngest input word of the first group; and
forward the youngest word to the second group prior to determining dependencies between input words of the first group.

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